



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending July 25, 2010

Contract DE-AC06-05RL14655

*Protecting the Columbia River*

## Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds (pending definitization of scope and contract modifications).

### A. The Environmental Restoration Disposal Facility (ERDF)

ERDF is the hub of the WCH scope of work and supports a major portion of other Hanford contractor (OHC) waste disposal. Wastes collected from sites around the Hanford complex are brought to ERDF for treatment and disposal. WCH operates the ERDF and is currently using ARRA funds to upgrade and expand its capabilities to meet the needs of Hanford's accelerating mission.

### B. The 618-10 Burial Grounds

The trenches at 618-10 have long been regarded as some of Hanford's worst waste sites. Using ARRA funds, WCH will characterize the site. Intrusive and non-intrusive techniques will be used, and the subsequent analysis of data will enable the project to pursue remediation of the site safely and effectively.

### C. The 618-11 Burial Grounds

Along with 618-10, the 618-11 Burial Grounds are among the biggest challenges faced by WCH using ARRA funds. The 618-11 characterization work will require special care because of its proximity to the Energy Northwest Generating Facility, north of the 300 Area.

### D. Waste Site Remediation

WCH is employing ARRA funds to clean up many failed waste sites not originally part of its contract. Sites in the 100-F and IU 2&6 segments 1&2 are proposed for waste site remediation in the two year period starting in October 2009.

### E. Confirmatory Sampling of other new sites

WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

This weekly report will provide evidence of these activities as they occur in support of ARRA.

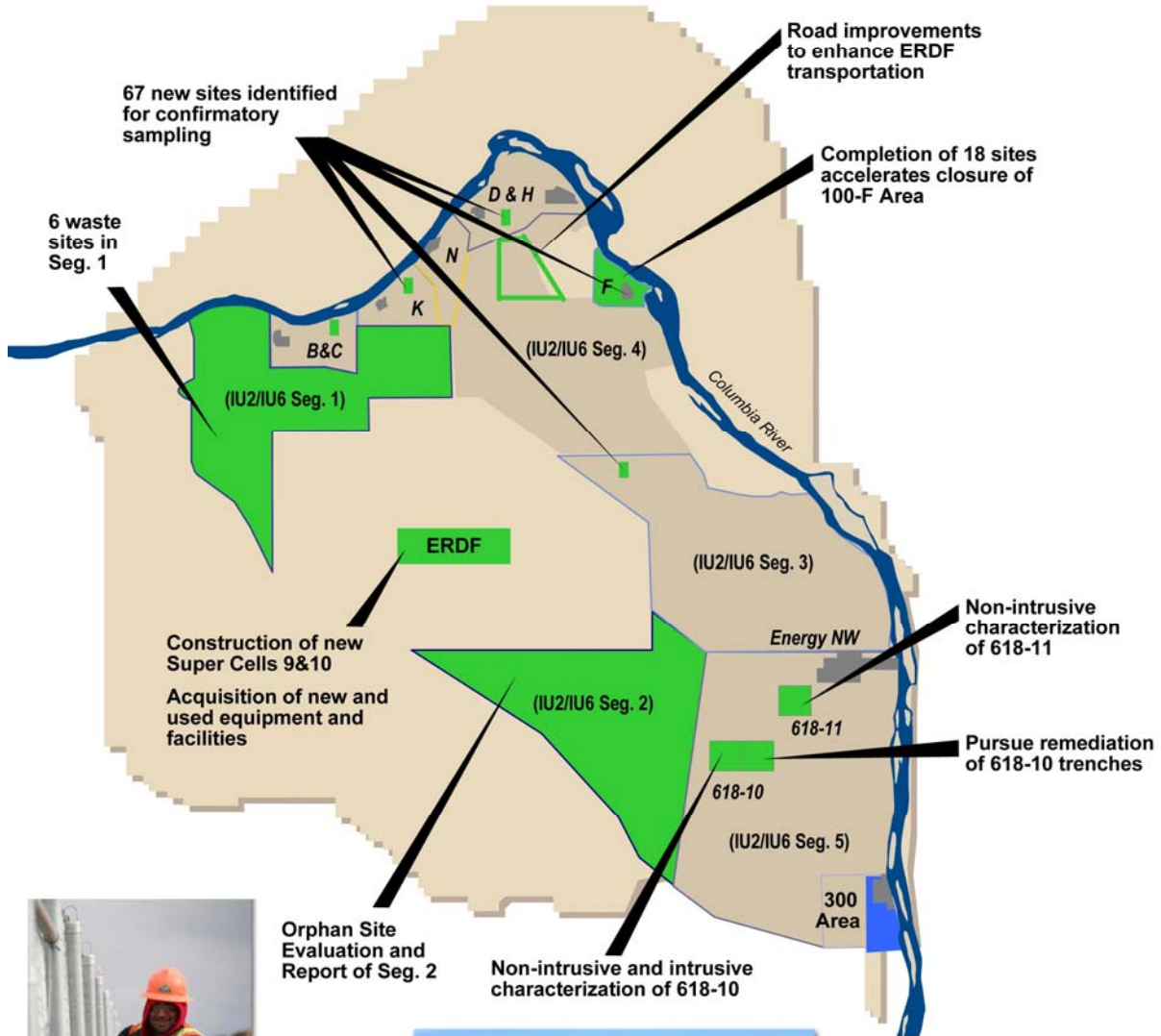
The following figure illustrates the overall scope of WCH's ARRA projects.



# Overview (Continued)



## ARRA Scope



E1004062 07/08/10



# Safety

## Safety Accomplishments

As of June 27, 2010, WCH and its subcontractors have worked 225,874 hours of ARRA scope with no safety incidents.

## Hazard Reductions

The River Corridor Closure Project's "Hot Topics" is used to share safety information with all WCH employees. Last week's edition focused on ladder safety. Falls from portable ladders are one of the leading causes of occupational fatalities and injuries, and are also routinely in Occupational Safety & Health Administration's (OSHA's) top-10 cited standards. Below are ways WCH employees are reminded to control and prevent injuries.

*Inspections* – Before initiating any work using a ladder, an inspection should be performed by the employee who intends to use the ladder. Visual inspection before using a ladder should focus on rivets, bolts, structural parts, rungs, and other hardware for integrity. There should be no parts coated with paint, oil, or grease. On portable ladders, the inspection should include a visual check of the inspection tag to ensure the ladder has been inspected by a competent person.

All portable ladders should be inspected by a competent person for visible defects on a semi-annual basis, and after any occurrence that could affect their safe use.

After an inspection is completed, the competent person should update and document the inspection tag located on the ladder. If the tag is missing, a new tag should be placed.

Ladders found to be defective with broken or missing rungs or steps, broken or split side rails, or other faulty or defective parts should not be used. When discovered with such defects, the defective ladders (portable or fixed) should be removed from service or tagged with a warning label that ensures no use.

*Ladder use approval* – All ladder use must be evaluated and approved by the work supervisor and project safety representative. This approval must be documented using the appropriate work package status log or the Ladder Usage Approval Form (WCH-QSH-027). Non-routine ladder use, such as ladder use above 6 feet, must be approved by the WCH Safety and Health Manager.

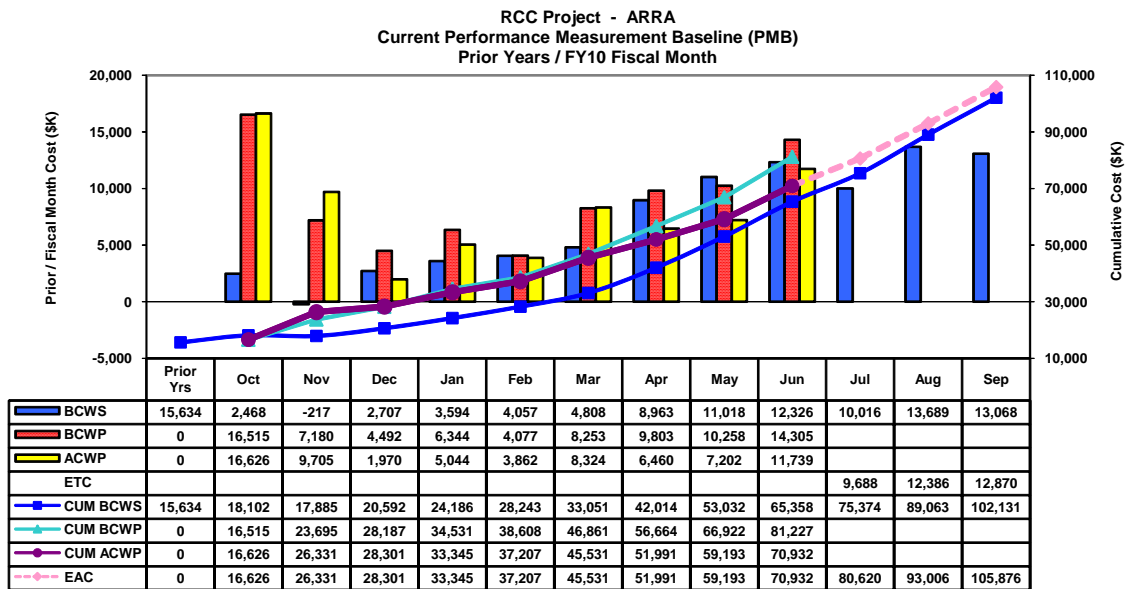
*Weight capacities* – Only ladders that are Extra Heavy Duty (Type IA – 300 pounds) or Special Duty (Type IAA – 375 pounds) are approved for use and purchase. Ensure that when selecting the proper ladder that you can meet the weight limitations including any tools and materials.



# Cost/Contract Status

Contract Mod #	Date	Scope	Obligated (\$M) (Inception to Date)	Not to Exceed (\$M) (Inception to Date)
099	4/9/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$28.0
105	4/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$44.5
126	7/23/09	H.37 Clause - Reporting Requirements	N/A	N/A
139	9/3/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$253.6	\$44.5
142	9/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$253.6	\$123.8
174	2/22/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$123.8
182	3/25/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$155.8
185	4/19/10	Phase 1 and Phase 2 Scope	\$248.2	\$178.0
192	4/27/10	Phase 1 and Phase 2 Scope	\$253.6	\$178.0
205	5/26/10	Reallocate Funds for Equipment and GPPs	\$253.6	\$178.0
210	6/23/10	Funding deobligation	\$229.3	\$178.0

## River Corridor Closure Project - ARRA



## ARRA Proposals 1, 2 and 3 Actuals (\$K)

Apportionment Number	Apportionment Title		June 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	9,088	51,305	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,651	19,627	38,907
<b>Sub Total</b>		<b>PMB</b>	<b>11,739</b>	<b>70,932</b>	<b>177,979</b>
<b>Fee</b>			<b>419</b>	<b>6,284</b>	
<b>Total</b>			<b>12,158</b>	<b>77,216</b>	

\* PMB is the Performance Measurement Baseline.



## ERDF

### Super Cells 9 and 10 Construction

WCH subcontractor TradeWind Services and its main subcontractor, DelHur Industries, continue construction of the liner and leachate collection systems for super cells 9 and 10.

The liner system consists of a 3-foot layer of admix, of two layers of high-density polyethylene (HDPE), a 1-foot layer of gravel with a 12-inch perforated drainage pipe, a geocomposite layer, and two geotextile layers. A 3-foot protective soil layer covers the liner system.

Approximately 50% of the admix used in the liner system has been placed in super cell 10. Admix is a 3-foot low-permeability compacted soil layer of the liner system and is manufactured by mixing excavated soil with imported bentonite. Earlier this month, the project team completed the placement of approximately 90,000 cubic yards of admix in super cell 9.



*TradeWind Services/DelHur Industries personnel load admix manufactured at an onsite pugmill at the Environmental Restoration Disposal Facility. At left are rolls of high-density polyethylene.*

The installation of the HDPE and geocomposite liners in super cell 9 also continues at a rapid pace. More than 85% of the secondary HDPE liner and 50% of the primary HDPE liner has been installed. The geocomposite liner is 70% complete.

## ERDF (Continued)



*A view from the northeast corner of the Environmental Restoration Disposal Facility shows the high-density polyethylene liner being installed in super cell 9 and admix being placed in super cell 10.*

The project team also has installed the secondary riser pipes from the sump of super cell 9 to the crest pad building, and has begun to form the lysimeter sump area in super cell 10.

## ERDF (Continued)



*The secondary riser pipe is installed down the north slope of super cell 9 at the Environmental Restoration Disposal Facility.*

The onsite screening plant continues to stockpile gravel for the gravel drainage layer of the liner system. About 20,000 cubic yards of gravel, enough for one of the super cells, has been manufactured. Each super cell is about 17 acres (including the base and the side slopes).

Construction also continues on the new leachate holding tank that will contain the leachate from super cells 9 and 10. The new holding tank is 100 feet in diameter with a capacity of 425,000 gallons. Each of ERDF's two existing holding tanks is 80 feet in diameter with a capacity of 275,000 gallons. Work also continues on the leachate transmission pipe from super cells 9 and 10 to the new leachate holding tank, and the crest pad buildings for super cells 9 and 10.

### **Facility and Equipment Upgrades**

WCH is scheduled to receive ELRFowler's 90% design of ERDF's new maintenance facilities and operations center in late July. ELRFowler is a joint venture between local companies ELR Consulting and Fowler General Construction.



## ERDF (Continued)

The upgraded transportation truck maintenance facility will include two additional truck bays, a large concrete pad, an exterior awning that will cover two smaller concrete pads, and a conference room. The new container maintenance facility will include a large container repair line, a maintenance shop, a weld area, a lunch area, and an exterior awning over a concrete pad. The new equipment maintenance facility will include two service lines, an operational storage facility, a large concrete pad, and an exterior awning over a smaller concrete pad.

Earlier this month, WCH issued a statement of work to Pacific Northwest National Laboratory (PNNL) for the new waste container tracking system PNNL designed for ERDF. PNNL is developing a proposal. The system will accurately track waste shipments and equipment, and generate real-time reports. PNNL conducted a proof-of-concept demonstration of its system in April. As part of the demonstration, Radio Frequency Identification and global positioning system tags were attached to waste containers to show how accurately the system tracks waste shipments and container locations, as well as generates maintenance reports.

Columbia Engineers and Constructors submitted its final design of ERDF's new septic system. WCH is preparing a change notice to ELRFowler for construction, which is scheduled to begin this fall. Columbia Engineers and Constructors is a small business based in Richland, Washington.

WCH is expected to receive delivery of two Genie articulating boom man lifts from Powers Equipment Company later this month. The man lifts will be used for elevated work such as installing rigging, washing out hazardous waste containers, applying fixatives, and adjusting lights. Powers Equipment Company is based in Pasco, Washington.

Hanford Site contractor Mission Support Alliance (MSA) awarded a subcontract for repair work on three Hanford Site roads – Routes 1, 2, and 4. The roads are used to transport waste material for disposal at ERDF.

WCH subcontractor George A. Grant continues with construction of a new lighting system at ERDF's transportation yard. A total of 15 light posts have been erected and the electrical is being installed. The transportation yard is used for truck-and-trailer combinations and other equipment. The truck-and-trailer combinations are used to transport non-regulated soil for disposal at ERDF.



## ERDF (Continued)



*Washington Closure Hanford subcontractor George A. Grant has erected 15 light posts in the Environmental Restoration Disposal facility's transportation yard.*

Construction of an onsite fueling station, designed by Sage Tech and WHPacific, is scheduled to begin in late summer. Currently, disposal equipment is fueled by a subcontractor that makes daily deliveries, and transportation uses the 200 East fuel station. Sage Tech is based in Richland, Washington. WHPacific is an Alaska-based company with an office in Richland, Washington. It specializes in all facets of building engineering, land development, water resources, survey, architecture, and transportation.

Sage Tech and WHPacific continue to develop a design package for a new batch plant at ERDF. The batch plant will manufacture concrete used to mix with debris, ensuring no void space during disposal operations. In support of the batch plant, WCH awarded two subcontracts to Peters and Keatts Equipment Inc. for a new pump truck and two concrete mixer trucks. All three trucks are scheduled to be delivered by late July. Peters and Keatts is based in Lewiston, Idaho.

A change notice has been issued to TradeWind Services for the construction of weather enclosures for the crest pad buildings associated with cells 1 and 2.



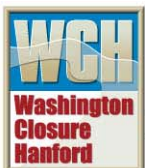
## ERDF (Continued)

### Upcoming Activities

- Continue to manufacture admix and place in super cell 10.
- Continue construction of the liner and leachate collection system for super cells 9 and 10.
- Continue to install riser pipes for super cell 9.

### Video

[\*Liner Construction Continues at the Environmental Restoration Disposal Facility\*](#)



## 618-10 Burial Ground

### **618-10 Non-Intrusive Characterization/Trench Remediation Project**

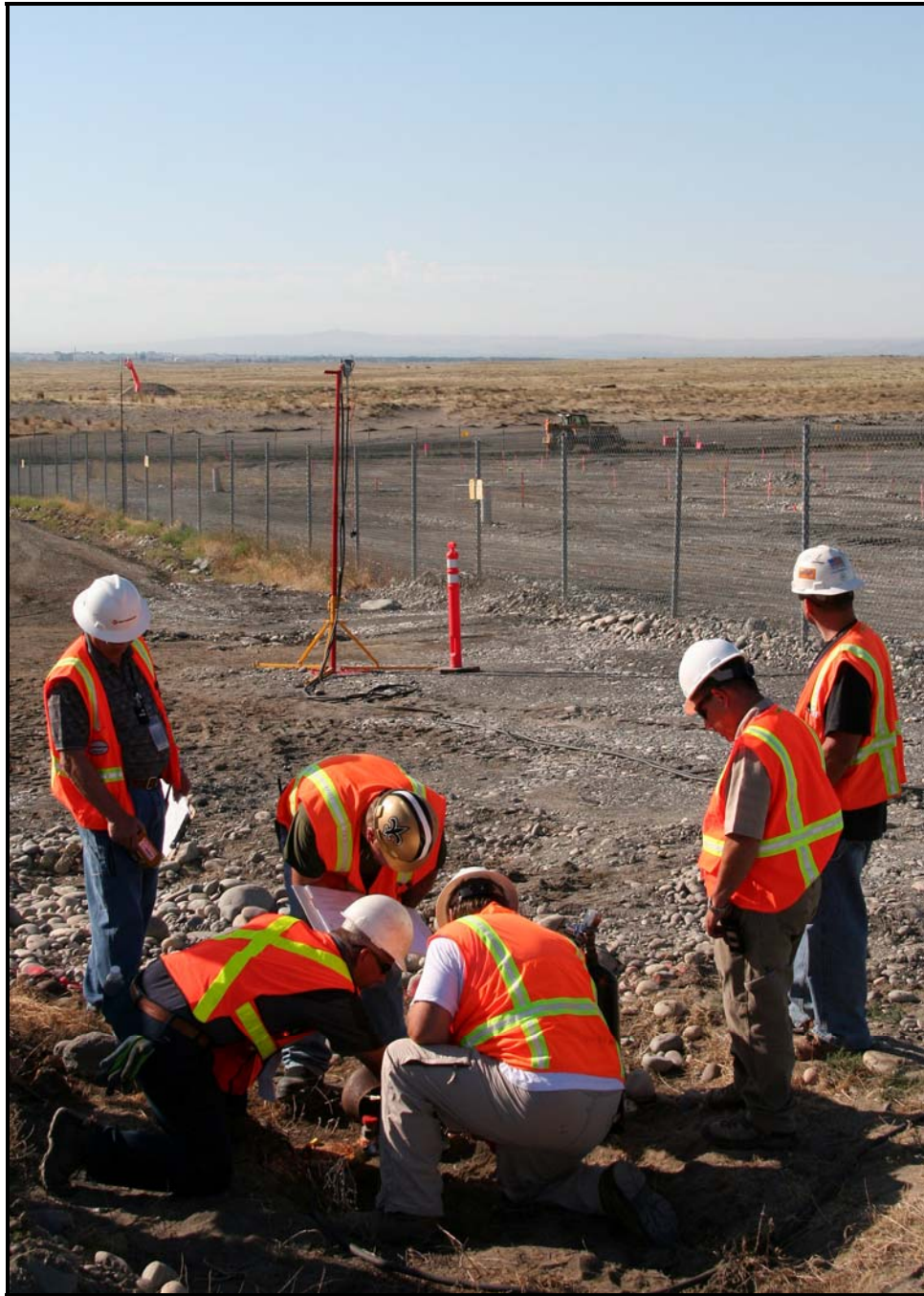
WCH continues to prepare for intrusive characterization at the 618-10 Burial Ground. Field operations have been delayed and now are scheduled to begin in early August. They will involve digging test pits in several disposal trenches to verify the condition and types of waste that were disposed.

The project team continued to perform mock-ups of drum characterization techniques, instrumentation, and procedural steps required in work packages. Preparations are being made for mock-ups of the drum penetration facility, which are scheduled for next week. Because the burial ground might contain potentially flammable material, unearthed drums will be opened in an onsite penetration facility with negative air pressure and remotely operated equipment. A sand hopper will be used to quench chemical reactions.

The disposition of the buried propane tank discovered last spring outside the site fence was completed. The tank was sampled and confirmed to have contained propane in the past. It was then purged, excavated and backfilled.



## 618-10 Burial Ground (Continued)



*Washington Closure Hanford employees prepare a buried tank for flaring at the 618-10 Burial Ground. The tank was empty, so flaring did not occur.*

## 618-10 Burial Ground (Continued)



*Washington Closure Hanford employees take a sample of the buried tank at the 618-10 Burial Ground. The tank was confirmed to have contained propane in the past.*

The development of procurement packages for trench remediation labor and equipment also continues.

Earlier this month, WCH awarded a subcontract worth nearly \$3.7 million to install water, electricity, roads, office trailers, and waste container transfer areas at the 618-10 Burial Ground. White Shield/Apollo is a small, disadvantaged joint venture between White Shield Inc. of Pasco, Washington, and Apollo Inc. of Kennewick, Washington. White Shield/Apollo will begin work at the burial ground this fall and is scheduled to complete infrastructure work by February 2011.

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-level radioactive waste from 300 Area laboratories and fuel development facilities. Low-activity wastes were primarily disposed in 23 trenches, while the moderate- and high-activity wastes were disposed in 94 vertical pipe units (VPUs). The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

Available records indicate that the burial ground was used to dispose of cardboard boxes of low-level waste and miscellaneous laboratory debris including bottles, boxes, filters, aluminum

## 618-10 Burial Ground (Continued)

cuttings, spent-fuel fragments in small juice cans, radiologically contaminated equipment and laboratory instruments, and high-level liquid waste sealed in drums.

Work continues on the development of the non-intrusive characterization report, which is scheduled to be issued in mid-August. Non-intrusive characterization field activities were completed May 20. The scope of activities carried out as part of non-intrusive characterization included geophysical delineation, in situ characterization using a multi-detector probe, and soil sampling from below a selection of 10 VPUs.

During in situ characterization, measurements were collected for 100 cone penetrometers in the trench area and 375 cone penetrometers in the VPU area. Data collected during non-intrusive characterization activities are being used to develop and evaluate safe and effective strategies for intrusive characterization (if required) and/or remediation.

### Upcoming Activities

- Continue work on procurement packages for trench remediation labor and equipment.
- Conduct full-dress PPE mock-ups for intrusive characterization.
- Continue development of non-intrusive characterization report.



## 100-F Area

WCH continues to prepare for remediation of the 18 remaining waste sites at 100-F Area. The project team began the Job Hazard Analysis (JHA)/work package sessions and continues to review submittals from subcontractor Ojeda Business Ventures.

Last month, WCH awarded a subcontract worth \$3.8 million to Ojeda to remediate the waste sites. Ojeda is a small disadvantaged business based in Richland, Washington, that specializes in construction, renovation, and construction management of federal government projects.

F Reactor operated from 1945 to 1965 as one of Hanford's nine surplus plutonium production reactors for the nation's nuclear weapons program. The reactor was cocooned in 2003. During reactor construction and operations, waste was disposed in unlined pits and trenches throughout the site.

The 100-F Area also was the home of the experimental animal farm (EAF), which from 1945 to 1976 operated adjacent to the reactor site. The EAF used animals for studying the potential effects of ionizing radiation exposure to humans in the occupational setting. Reactor and EAF sites in the 100-F Area contributed to the discharge of contaminated cooling water, other liquids, and solid wastes.

WCH completed most of the cleanup work at F Area in 2008. However, during the course of cleanup, 18 additional waste sites were discovered. The 18 sites that require remediation are:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-26:7 (sodium dichromate and sodium silicate pipelines)
- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (buried riverbank effluent pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-49 (maintenance garage lube pit foundation, pipelines, drywells)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-56 (scattered surface debris, stains)
- 100-F-57 (buried pipeline cradle debris)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-60 (pipeline)
- 100-F-61 (stained soil site)
- 100-F-8 (French drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines).

### Upcoming Activities

- Continue mobilization PSR completion activities.
- Continue reviewing subcontractor submittals.





## I U 2 & 6 Segment 1

Work continues on waste site-specific verification closeout sample plans to determine the number and location of waste site closeout samples including field quality control samples, sampling methodologies, analyte lists, and analytical methods. Once the work instructions are reviewed and approved by the U.S. Department of Energy, Richland Operations Office (RL) and the U.S. Environmental Protection Agency, verification closeout samples are collected for laboratory analysis.

Closeout verification sample data has been received from the analytical laboratory for waste site 600-345. Data for the southeast quadrant (quadrant 4) of the waste site remains above the remedial action goal for total petroleum hydrocarbons (TPH). Waste site 600-345 was excavated earlier this year to approximately 1.5 feet below grade, removing the stained soil and oil filters residing on the ground surface. Additional remediation of the southeast quadrant is required to remove the TPH contaminated soil to then be followed by a second round of closeout sampling. The field remediation project initiated planning to implement this additional effort.

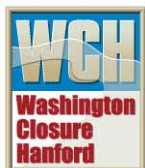
Remediation of five IU 2 & 6 Segment 1 waste sites discovered during the 2008 orphan site evaluation was completed in April. The remediation sites are as follows:

- 600-341 (four areas that contained dry cell battery remnants and/or battery debris)
- 600-343 (residual ash from burned material and dumped asphalt in excavation trench)
- 600-344 (stained area)
- 600-345 (stained area with oil filters)
- 600-346 (four small fly-ash dump areas with metal debris).

Earlier this year a global positioning environmental radiological survey indicated that an additional site, 600-342, did not require additional remediation.

IU 2 & 6 Segment 1 encompasses about 23 square miles of the northwestern portion of the Hanford Site, away from the nine surplus plutonium production reactor areas. Segment 1 sites were unique because they were primarily used for housing and support areas.

Remediation of these waste sites will contribute to RL's Vision 2015 goal of completing regulatory closure work in IU 2 & 6 Segment 1 by the end of 2010.



## Confirmatory Sampling

WCH and subcontractor Terranear (TPMC) continue to prepare for confirmatory sampling of 67 waste sites at 100-D, 100-F, 100-K, and 100-IU 2/6 areas. Confirmatory sampling is performed for waste sites that require additional information for determining the need for site remediation. TPMC is scheduled to begin sampling at 100-D in early August.

WCH has issued the confirmatory sampling work instructions and remove, treat, and dispose memos for 62 of 67 sites for 100-D, 100-K, and 100-IU 2/6. In addition, the sampling instruction for the 100-F Area was added and approved to the confirmatory scope. The remaining five 100-D Area sampling instructions are with DOE and the regulatory agencies for review or comment resolution, with a forecasted completion date in early August. Of the 67 sites earmarked for confirmatory sampling, 26 have been recommended to remove, treat, and dispose, which means they will not undergo the sampling process.

Sites that pass the confirmatory sampling process will be closed out and no further action will be required under the existing interim record of decision. Those that fail will be recommended for remediation to meet regulatory standards.



## General

### **Mentoring/Training**

No significant mentoring/training events this week.

### **Media, Visits, Press Releases**

No significant media events this week.

### **Contracting Actions**

- 618-10 Non-Destructive Analysis/Real Time Radiography “Proof-of-Principle” testing subcontract awarded to VJ Technologies.
- Notice to Proceed issued for mobilization of ERDF Facility Improvements – Maintenance Facilities.

